

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

MONITORING AND REPORTING PROGRAM NO. R7-2002-0103
FOR
UNITED STATES BUREAU OF RECLAMATION, OWNER/OPERATOR
PARKER DAM AND POWER PLANT DRINKING WATER FACILITY
Parker Dam – San Bernardino County

Location of Discharge: Colorado River below Parker Dam in the in the NW ¼ of the NW ¼ of Section 3,
T2N, R27E, SBB&M

MONITORING

1. The collection, preservation and holding times of all samples shall be in accordance with United States Environmental Protection Agency (USEPA) approved procedures. Unless otherwise approved by the Regional Board's Executive officer, all analyses shall be conducted by a laboratory certified for such analysis by the State Department of Health Services. All analyses shall be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40CFR 136), promulgated by the USEPA.
2. Compliance with the discharge limitations shall be determined at the end of the treatment process or as specified in the Board Order.
3. If the facility is not in operation, or there is no discharge during a required reporting period, the discharger shall either forward a letter, or write a notation on the required monthly monitoring report to the Regional Board, indicating that there has been no activity during the required reporting period.

INFLUENT MONITORING

The water supply to the drinking water treatment facility shall be monitored for the following:

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Total Dissolved Solids	mg/L ¹	Grab	Monthly

EFFLUENT MONITORING

¹ mg/L – milligrams-per-Liter

A sampling station shall be established at the point of discharge and shall be located where representative samples of effluent can be obtained. Wastewater discharged to the Colorado River shall be monitored for the following constituents:

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Volume of Discharge to Colorado River	Gallons	Flow Meter Reading	Monthly ²
pH (Hydrogen Ion)	pH Units	Grab	Monthly
Total Suspended Solids	mg/L Lbs/day ³	Grab	Monthly
Total Dissolved Solids	mg/L	Grab	Monthly
Temperature	°F	Grab	Monthly

RECEIVING WATER MONITORING

A monitoring station shall be established for collecting samples in the Colorado River. The sampling station should be located no more than five (5) feet immediately downstream of the discharge pipe outlet at a point where the discharge plume would be expected. Samples shall be collected while a discharge is taking place and analyzed for the following constituents.

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Total Chlorine Residual	mg/L	Grab	Monthly
Temperature	°F	Grab	Monthly
pH	----	Grab	Monthly
Toxicity ⁴	TU	Grab	Annually

In conducting the receiving water sampling, attention shall be given to the presence or absence of:

- | | |
|--|---|
| a. Floating or suspended matter | d. Visible film, sheen or coating |
| b. Discoloration | e. Fungi, slime, or objectionable growths |
| c. Aquatic life (including plants, fish, shellfish, birds) | f. Potential nuisance conditions |

Notes on receiving water conditions shall be summarized in the monitoring report. A log shall be kept of the receiving water conditions.

2,3,7,8- TETRACHLORODIBENZO-P-DIOXIN (TCDD) EQUIVALENT MONITORING

By April 15, 2004, the discharger shall complete monitoring its effluent for the presence of 17 (Toxic equivalency factors for 2,3,7,8-tetrachlorodibenzo-p-dioxin equivalents) congeners once during the dry

² Total monthly filter backwash discharge

³ Lbs/day – pounds-per-day, daily discharge rate in MGD multiplied by effluent TSS concentration in mg/L multiplied by 8.34

⁴ See Receiving Water Toxicity Section

weather and once during the wet weather within a period of three (3) consecutive years. The congeners and Toxic Equivalent Factors can be found in Table 4 of the "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California." A copy of Table No. 4 is shown below.

Table 4

<u>Congener</u>	<u>TEF</u>
2,3,7,8- Tetra-Chlorodibenzo-p-dioxins (CDD)	1
1,2,3,7,8- Penta-CDD	1.0
1,2,3,4,7,8- Hexa-CDD	0.1
1,2,3,6,7,8- Hexa-CDD	0.1
1,2,3,7,8,9- Hexa-CDD	0.1
1,2,3,4,6,7,8- Hepta-CDD	0.01
Octa-CDD	0.0001
2,3,7,8- Tetra- Chlorinated dibenzofurans (CDF)	0.1
1,2,3,7,8- Penta-CDF	0.05
2,3,4,7,8- Penta-CDF	0.5
1,2,3,4,7,8- Hexa-CDF	0.1
1,2,3,6,7,8- Hexa-CDF	0.1
1,2,3,7,8,9- Hexa-CDF	0.1
2,3,4,6,7,8- Hexa-CDF	0.1
1,2,3,4,6,7,8- Hepta-CDF	0.01
1,2,3,4,7,8,9- Hepta-CDF	0.01
Octa-CDF	0.0001

The discharger shall report for each congener the analytical results of the effluent monitoring, including the quantifiable limit and the Method Detection Limit⁵, and the measured or estimated concentration. In addition, the discharger shall multiply each measured or estimated congener concentration by its respective Toxic Equivalent Factors⁶ value and report the sum of these values. This information shall be submitted as part of the discharger's monitoring reports.

⁵ As determined by the procedure found in 40 CFR 136 (revised as of May 14, 1999)

⁶ Table 4 Toxic Equivalency Factors TEFs for 2, 3, 7, 8-TCDD Equivalents, pg. 27, Policy for implementation of Toxics, Standard for Inland Surface Waters, Enclosed Bays and Estuaries of California, Adopted March 2, 2000

OPERATION AND MAINTENANCE

The discharger shall inspect and document any operation/maintenance problems by inspecting each unit process. The report shall include a listing of flow metering locations and dates of calibration of each flow meter. The results of the operation and maintenance inspections shall be forwarded to this Regional Board annually.

SLUDGE MONITORING

The discharger shall report annually on the quantity, location and method of disposal of all sludge and similar solid material being produced at the treatment plant facility.

In the event that sludge generated at the water treatment plant is disposed of in a manner different than described in findings No. 6 of the Waste Discharge Requirements, the discharger shall sample and analyze for the following:

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Arsenic	mg/kg ⁷	Composite	Annually
Cadmium	mg/kg	Composite	Annually
Chromium	mg/kg	Composite	Annually
Copper	mg/kg	Composite	Annually
Lead	mg/kg	Composite	Annually
Mercury	mg/kg	Composite	Annually
Molybdenum	mg/kg	Composite	Annually
Nickel	mg/kg	Composite	Annually
Selenium	mg/kg	Composite	Annually
Zinc	mg/kg	Composite	Annually

⁷ mg/kg – milligrams-per-kilogram

RECEIVING WATER TOXICITY TESTING

The discharger shall conduct chronic and acute toxicity testing on the receiving water as follows:

<u>Test</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Minimum Frequency of Test</u>
Chronic Toxicity	TU _c ⁸	Grab	Annually
Acute Toxicity ⁹	TU _a ¹⁰ or (P or F) ¹¹	Grab	Annually

Both test species given below shall be used to measure acute and chronic toxicity:

<u>Species</u>	<u>Effect</u>	<u>Test Duration (Days)</u>	<u>Reference</u>
Fathead Minnow (<i>Pimephales promelas</i>)	Larval Survival and Growth	7	EPA/600/4-91/002 (chronic) EPA/600/4-90/027F (acute)
Water Flea (<i>Ceriodaphnia dubia</i>)	Survival and Reproduction	7	EPA/600/4-91/002 (chronic) EPA/600/4-90/027F (acute)

Toxicity Test References:

1. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fourth Edition, EPA/600-4-90-027F, August, 1993.
2. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water for Freshwater Organisms, Third Edition, EPA/600/4-91/002, July 1994.
3. Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program, EPA 833-R-00-003, June 2000.
4. Method Guidance and Recommendations for Whole Effluent Testing, EPA 821-B-00-004, July 2000.
5. Clarifications Regarding Flexibility in 40 CFR Part 136 Whole Effluent Toxicity (WET) Test Methods, memorandum dated April 10, 1996 from Tudor Davies, Director of the EPA Office of Water's Office of Science and Technology.

QUALITY ASSURANCE

⁸ TU_c - Chronic Toxicity Units

⁹ Acute bioassay results can be calculated from chronic bioassay test for *Pimephales promelas*

¹⁰ TU_a - Acute Toxicity Units

¹¹ P or F - Pass or Fail when using a t-test

Dilution and control waters may be obtained from an unaffected area of receiving waters. Synthetic (standard) dilution is an option and may be used if the above source is suspected to have toxicity greater than 1.0 TU_c.

A series of at least five (5) dilutions and a control shall be tested for chronic toxicity testing and may be used for acute toxicity testing. The series shall include the following concentrations: 12.5, 25, 50, 75, and 100 percent effluent.

For the acute toxicity testing using a t-test, two (2) dilutions shall be used, i.e., 100 percent effluent and a control (when a t-test is used instead of an LC50).

If organisms are not cultured in-house, concurrent testing with a referenced toxicant shall be conducted. Where organisms are cultured in-house, monthly reference toxicant testing is sufficient. Reference toxicant tests also shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc.).

If either the reference toxicant test or effluent test does not meet all test acceptability criteria (TAC) as specified in the toxicity test references, then the permittee must re-sample and retest within 14 days or as soon as possible.

DEFINITION OF TOXICITY

Chronic toxicity measures sublethal effect (e.g., reduced growth, reproduction) to experimental test organisms exposed to an effluent or ambient waters compared to that of the control organisms.

Chronic toxicity shall be measured in TU_c, where $TU_c = 100/NOEC$. The no observed effect concentration (NOEC) is the highest concentration of toxicant to which organisms are exposed in a chronic test that causes no observable adverse effect on the test organisms (e.g., the highest concentration of toxicant to which the value for the observed responses are not statistically significantly different from the controls).

Acute toxicity is a measure of primarily lethal effects that occur over a 96-hour period. Acute toxicity for Pimephales promelas can be calculated from the results of the chronic toxicity test for Pimephales promelas and reported along with the results of each chronic test. Acute toxicity of Ceriodaphnia dubia cannot be calculated from the results of the chronic toxicity test for Ceriodaphnia dubia because the test design is not amenable to calculation of a lethal concentration (LC50) value as needed for the acute requirement.

Acute toxicity shall be measured in TU_a, where $TU_a = 100/LC50$ or as pass/fail using a t-test. LC50 is the toxicant concentration that would cause death in 50 percent of the test organisms.

REPORTING OF BIOASSAY RESULTS

The discharger shall submit the analysis and results of the toxicity tests, including any accelerated testing, in toxicity units with the discharge monitoring reports for the month in which the last test is conducted.

REPORTING OF TOXICITY IDENTIFICATION EVALUATION AND/OR RESULTS OF THE TOXICITY REDUCTION EVALUATION WORKPLAN

1. If a Toxicity Identification Evaluation (TIE) is conducted the discharge shall submit the results of the TIE with the discharge monitoring reports for the month in which the final report is completed.

2. If the Toxicity Reduction Evaluation (TRE) Workplan has been initiated, the discharger shall report on the progress of the actions being taken and include this information with each monthly monitoring report.

REPORTING

1. The discharger shall report the results of acute and chronic toxicity testing as determined through standard toxicity protocols.
2. The discharger shall arrange the data in tabular form so that the specified information is readily discernible. The data should be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with Waste Discharge Requirements.
3. The discharger shall report with each sample result the applicable Minimum Level (as described in the California Toxics Policy) and the laboratory current Method Detection Limit, as determined by the procedure in 40 CFR 136 (revised as of May 14, 1999).
4. Records of monitoring information shall include:
 - a. The date, exact place, and time of sampling or measurement(s);
 - b. The individual(s) who performed the sampling or measurement(s);
 - c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or methods used; and
 - f. The results of such analyses.
5. The results of any analysis of samples taken more frequently than required at the locations specified in this Monitoring and Reporting Program shall be reported to the Regional Board.
6. Monitoring reports shall be certified under penalty of perjury to be true and correct, and shall contain the required information at the frequency designated in this monitoring report.
7. Each report shall contain the following statement:

“I declare under the penalty of law that I personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.”
8. A duly authorized representative of the discharger may sign the documents if:
 - a. The authorization is made in writing by the person described above;
 - b. The authorization specified an individual or person having the responsibility for the overall operation of the regulated disposal system; and
 - c. The written authorization is submitted to the Regional Board’s Executive Officer.

9. Reporting of any failure in the facility shall be as described as in Provision No. 30. Results of any analysis performed as a result of a failure of the facility shall be provided within ten (10) days after collection of the samples.
10. The discharger shall attach a cover letter to the Self Monitoring Report. The information contained in the cover letter shall clearly identify violations of the WDR's, discuss corrective actions to be taken or planned and the proposed time schedule of corrective actions. Identified violations should include a description of the requirement that was violated and a description of the violation.
11. Daily, weekly, and monthly monitoring reports shall be submitted to the Regional Board by the 15th day of the following month. Annual reports shall be submitted by January 15 of each year.
12. Submit reports to:

California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260

A copy of the monitoring report shall also be sent to:

Regional Administrator
U.S. Environmental Protection Agency
Region 9, Attn: 65MR, W-3
75 Hawthorne Street
San Francisco, CA 9410

Ordered by: _____
Executive Officer

Date